

**Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

- 1           1. (Currently Amended) A nonlinear crystal used for mixing of optical  
2 signals, the nonlinear crystal comprising:  
3           a plurality of domains, the domains being arranged serially across the  
4 nonlinear crystal, the domains having alternating polarity; and,  
5           wherein the poling periods of the domains are varied across the  
6 nonlinear crystal so as to provide a nonuniform chirping of phase matching  
7 of focused optical signals propagated through the nonlinear crystal.
  
- 1           2. (Original) A nonlinear crystal as in claim 1 wherein the nonlinear  
2 crystal is composed of periodically poled lithium niobate (PPLN).
  
- 1           3. (Original) A nonlinear crystal as in claim 1 wherein a chirp slope is  
2 steeper near a center of the non-linear crystal and shallower towards end  
3 facets of the non-linear crystal.
  
- 1           4. (Original) A nonlinear crystal as in claim 1, wherein the poling  
2 periods of the domains are varied across the nonlinear crystal so as to

3 provide nonlinear chirping of phase matching of the focused optical signals  
4 propagated through the nonlinear crystal.

1 5. (Original) A nonlinear crystal as in claim 1, wherein the poling  
2 periods of the domains are varied across the nonlinear crystal so as to  
3 provide piecewise linear chirping of phase matching of the focused optical  
4 signals propagated through the nonlinear crystal.

1 6. (Original) A nonlinear crystal as in claim 1 wherein the focused  
2 optical signals comprise:  
3 a first focused optical signal; and,  
4 a second focused optical signal, the second focused optical signal being  
5 an optical strobe signal.

1 7. (Original) A nonlinear crystal as in claim 1 wherein nonlinear  
2 crystal is within an optical sampling digital oscilloscope.

1 8. (Currently Amended) A method for increasing spectral acceptance  
2 within a nonlinear crystal, the method comprising the following steps:  
3 (a) arranging the nonlinear crystal as a plurality of domains, the  
4 plurality of domains having alternating polarity as the domains are traversed  
5 serially across the nonlinear crystal; and,

6 (b) varying the poling periods of the domains across the nonlinear  
7 crystal so as to provide a nonuniform chirping of phase matching of focused  
8 optical signals propagated through the nonlinear crystal.

1 9. (Original) A method as in claim 8 wherein in step (a) the nonlinear  
2 crystal is composed of periodically poled lithium niobate (PPLN).

1 10. (Original) A method as in claim 8 wherein in step (b) a chirp slope  
2 is steeper near a center of the non-linear crystal and shallower towards end  
3 facets of the non-linear crystal.

1 11. (Original) A method as in claim 8, wherein in step (b) the poling  
2 periods of the domains are varied across the nonlinear crystal so as to  
3 provide nonlinear chirping of phase matching of the focused optical signals  
4 propagated through the nonlinear crystal.

1 12. (Original) A method as in claim 8, wherein in step (b) the poling  
2 periods of the domains are varied across the nonlinear crystal so as to  
3 provide piecewise linear chirping of phase matching of the focused optical  
4 signals propagated through the nonlinear crystal.

1 13. (Currently Amended) A nonlinear crystal with increased spectral  
2 acceptance, the nonlinear crystal comprising:

3 a plurality of domains, the domains being arranged serially across the  
4 nonlinear crystal, the domains having alternating polarity; and,  
5 wherein the poling periods of the domains are varied across the  
6 nonlinear crystal so as to provide a nonuniform chirping of phase matching  
7 of focused optical signals propagated through the nonlinear crystal.

1 14. (Original) A nonlinear crystal as in claim 13, wherein the nonlinear  
2 crystal is composed of periodically poled lithium niobate (PPLN).

1 15. (Original) A nonlinear crystal as in claim 13 wherein a chirp slope  
2 is steeper near a center of the non-linear crystal and shallower towards end  
3 facets of the non-linear crystal.

1 16. (Original) A nonlinear crystal as in claim 13, wherein the poling  
2 periods of the domains are varied across the nonlinear crystal so as to  
3 provide nonlinear chirping of phase matching of the focused optical signals  
4 propagated through the nonlinear crystal.

1 17. (Original) A nonlinear crystal as in claim 13, wherein the poling  
2 periods of the domains are varied across the nonlinear crystal so as to  
3 provide piecewise linear chirping of phase matching of the focused optical  
4 signals propagated through the nonlinear crystal.

- 1 18. (Original) A nonlinear crystal as in claim 13, wherein nonlinear
- 2 crystal is within an optical sampling digital oscilloscope.